

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of	)	
	)	
	)	
Service Rules for Advanced Wireless Services in the	)	WT Docket No. 12-70;
2000-2020 MHz and 2180-2200 MHz Bands	)	
	)	
Fixed and Mobile Services in the Mobile Satellite	)	ET Docket No. 10-142;
Service Bands at 1525-1559 MHz and 1626.5-	)	
1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500	)	
MHz, and 2000-2020 MHz and 2180-2200 MHz	)	
	)	
Service Rules for Advanced Wireless Services in the	)	WT Docket No. 04-356
1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz	)	
and 2175-2180 MHz Bands	)	

**Comments of Nokia Siemens Networks**

Nokia Siemens Networks US LLC ("Nokia Siemens Networks") hereby comments in response to the Notice of Proposed Rulemaking ("NPRM") and Notice of Inquiry ("NOI") adopted and released by the Federal Communications Commission ("Commission") on March 21, 2012 in the above-captioned proceedings.<sup>1</sup> Nokia Siemens Networks supports expeditiously repurposing the 2 GHz Mobile Satellite Service ("MSS") spectrum for more flexible uses including terrestrial services.

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<sup>1</sup> Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands; Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz; Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands WT Docket Nos. 04-356, 12-70; ET Docket No. 10-142, *Notice of Proposed Rulemaking and Notice of Inquiry* (Mar. 21, 2012) (FCC 12-32).

Nokia Siemens Networks is a leading global enabler of communications services. As the world's specialist in mobile broadband, Nokia Siemens Networks operates at the forefront of each generation of mobile technology, including 4G Long Term Evolution (LTE), providing the most efficient mobile networks, the intelligence to maximize the value of those networks and the services to make it all work seamlessly.

**I. The Demand for Mobile Broadband Capability is Insatiable.**

Consumers desire to be connected “anywhere and anytime” and they are demanding the capability to send and receive huge volumes of data in order to conduct business and manage their personal lives. As the Commission recognizes in the *NPRM*,<sup>2</sup> new applications, consumption of media on the go, more connected devices such as smart phones, laptops, netbooks, tablets and machine-to-machine devices all add to large increases in bandwidth demand. Enterprises are increasing their reach to consumers and other business users with web applications, cloud computing and vertical market solutions in the health, energy, transportation and other markets. Mobile broadband demand also derives from greater personal use to stay in contact with friends and family, social networking, gaming and other entertainment options while away from home, and increasingly even use in the home.

Nokia Siemens Networks has a firsthand view of the impact of mobile broadband on individuals, communities and entire nations around the world. Our research has led us to predict a thousand-fold increase in total mobile broadband traffic by 2020. The assumptions include up

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<sup>2</sup> *Id.* at ¶ 10.

to 100 times higher data traffic per user.<sup>3</sup> However, mobile network operators are facing escalating challenges in responding to this growth in usage, including the reality that mobile networks increasingly are capacity constrained. While the innovative technologies that Nokia Siemens Networks and other vendors are bringing to the market provide creative solutions to increase network efficiency, enhance capacity and improve the user experience, ultimately they are insufficient by themselves to keep pace with the rising demand. Availability of additional spectrum must be part of the equation. As part of the research noted above, Nokia Siemens Networks has estimated the general need on a global basis of a ten-fold increase in spectrum availability for mobile broadband by 2020. Specific to the U.S., the calls for needing 500 MHz of additional spectrum to meet these demands are well known, including by the Commission itself. Other countries are allocating more and more spectrum to meet demand and the U.S. must keep pace in order to maintain a leadership position in broadband deployment and adoption.

Repurposing the 2 GHz MSS spectrum expeditiously was identified in the National Broadband Plan as one of the important Commission actions needed to bring more spectrum to market quickly.<sup>4</sup> While satellite services provide a critical link in certain circumstances, the spectrum in this band has been underutilized for some time and repurposing this spectrum to allow technology neutral, flexible use of the band would increase its utilization. The band is also well suited for commercial wireless deployments. The repurposing would quickly open up 40 MHz of additional spectrum for the delivery of wireless broadband services.

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<sup>3</sup> See <http://blogs.nokiasiemensnetworks.com/mobile-broadband-the-future/2012/02/02/infographic-mobile-broadband-2020/>

<sup>4</sup> *NPRM* at ¶13.



## **II. The 2 GHz Band Should be Repurposed for Terrestrial Use to Support Mobile Broadband.**

The *NPRM* requests comments on a variety of considerations for the band including appropriate size of allocations in the band.<sup>5</sup> The demand for mobile broadband connectivity requires increased speeds and capacity considerations. The narrow allocations of the past are proving too small in many cases. Wide contiguous channels are needed to deliver the speeds and capacity that users are demanding. The allocation must allow channel sizes of at least 20 MHz of spectrum (10 MHz in each direction) for the effective delivery of content today. Even wider channels will be needed in the near future so Nokia Siemens Networks supports allocations that permit channels of up to 40 MHz (20 MHz in each direction).

Nokia Siemens Networks encourages rules that align the operations and technical parameters consistent with other commercial wireless services as much as possible while protecting existing licensees and operations. Nokia Siemens Networks generally supports following rules that apply to commercial wireless operations in general<sup>6</sup> and Nokia Siemens Networks agrees that there must be appropriate adjustments to protect adjacent operations while also protecting the uses of the 2 GHz allocation consistent with established and well accepted principles of co-existence between all licensees. Any guard band requirements and protective measures should be generally aligned with accepted practices and that allow commercially viable operations in the band. The propagation characteristics of the 2 GHz band also can be factored into co-existence considerations. As with other commercial wireless allocations, granting

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<sup>5</sup> *Id.* at ¶ 22.

<sup>6</sup> *Id.* at ¶ 17.

technology neutral, flexible use of the allocation, while protecting incumbent operations, ensures that its potential can be maximized and use can evolve to meet the changing demands of the market. Being able to use, and adopt as necessary, the spectrum for various purposes and in unique ways over time is important as operators seek to differentiate themselves and address the rapid changes generated by new and innovative concepts in the marketplace. The Commission therefore should not be overly prescriptive in how the spectrum must be used, except for the need to protect adjacent operations within reasonable parameters.

The Commission requests comment on the revocation of a license in this allocation in the event a licensee fails to meet the service deployment requirements.<sup>7</sup> Nokia Siemens Networks believes that the Commission should adopt deployment and service conditions similar to those rules in place for other commercial wireless deployments that have consequences that fall short of complete revocation of a license upon a missed interim or final milestone. Unforeseen circumstances can arise that otherwise impede a good faith effort to achieve full compliance with the deployment service requirements. The Commission generally has applied other remedies in instances in which commercial wireless licensees fail to meet their substantial service requirements.

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<sup>7</sup> *Id.* at ¶ 94.

### **III. Conclusion.**

Nokia Siemens Networks encourages the Commission to move expeditiously to repurpose the 2 GHz MSS allocation for technology neutral, flexible use including terrestrial services. Such action will be an important step in making spectrum available to help satisfy the escalating demand for mobile broadband connectivity.

Respectfully submitted,

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